

IN THE CLAIMS

1. (Currently amended) A cathode active material for a lithium secondary cell comprising a lithium-transition metal oxide capable of lithium ion intercalation/deintercalation, characterized by further comprising a lithium manganese oxide having a higher irreversible capacity than the lithium-transition metal oxide and having a layered structure represented by the following formula 1 as an additive:

[formula 1]



wherein, x is a number satisfying $0.05 \leq x < 0.5$, and M is at least one metal selected from the group consisting of Cr, Al, ~~Ni~~, Mn and Co.

2. (Currently amended) The cathode active material according to claim 1, wherein the content of the lithium manganese oxide having a higher irreversible capacity than the lithium-transition metal oxide and having a layered structure is 1 to 50 parts by weight based on 100 parts by weight of the lithium-transition metal oxide.

3. (Currently amended) The cathode active material according to claim 1, wherein the lithium manganese oxide having a higher irreversible capacity than the lithium-transition metal oxide and having a layered structure is $\text{LiCr}_{0.1}\text{Mn}_{0.9}\text{O}_2$.

4. (Currently amended) The cathode active material according to claim 1, wherein the lithium manganese-transition metal oxide is at ~~least~~ least one material selected from the group consisting of:

LiCoO_2 , LiNiO_2 , LiMnO_2 , LiMn_2O_4 , $\text{Li}(\text{Ni}_a\text{Co}_b\text{Mn}_c)\text{O}_2$, $\text{LiNi}_{1-d}\text{Co}_d\text{O}_2$, $\text{LiCo}_{1-d}\text{Mn}_d\text{O}_2$, $\text{LiNi}_{1-d}\text{Mn}_d\text{O}_2$, $\text{Li}(\text{Ni}_x\text{Co}_y\text{Mn}_z)\text{O}_4$, $\text{LiMn}_{2-n}\text{Ni}_n\text{O}_4$, $\text{LiMn}_{2-n}\text{Co}_n\text{O}_4$, LiCoPO_4 and LiFePO_4 , wherein $0 < a < 1$, $0 < b < 1$, $0 < c < 1$, $a + b + c = 1$, $0 \leq d < 1$, $0 < x < 2$, $0 < y < 2$, $0 < z < 2$, $x + y + z = 2$, and $0 < n < 2$.

5. (Currently amended) A lithium secondary cell comprising a cathode, an anode, a separator, and a non-aqueous electrolyte solution containing a lithium salt and an electrolyte compound, wherein the cathode comprises a cathode active material comprising a lithium-

transition metal oxide capable of lithium ion intercalation/ deintercalation, and a lithium manganese oxide having a higher irreversible capacity than the lithium-transition metal oxide and having a layered structure represented by the following formula 1 as an additive:

[formula 1]



wherein, x is a number satisfying $0.05 \leq x < 0.5$, and M is at least one metal selected from the group consisting of Cr, Al, ~~Ni~~, Mn and Co.

6. (Currently amended) The lithium secondary cell according to claim 5, wherein the lithium manganese oxide having a higher irreversible capacity than the lithium-transition metal oxide and having a layered structure represented by the following formula 1, which is contained in the cathode active material, is changed into a lithium manganese oxide having a spinel structure represented by the following formula 2 by the first charge/discharge cycle of the lithium secondary cell:

[formula 1]



[formula 2]



wherein, x is a number satisfying $0.05 \leq x < 0.5$, and M is at least one metal selected from the group consisting of Cr, Al, ~~Ni~~, Mn and Co.

7. (Original) The lithium secondary cell according to claim 5, wherein the lithium salt is at least one selected from the group consisting of LiClO_4 , LiCF_3SO_3 , LiPF_6 , LiBF_4 , LiAsF_6 and $\text{LiN}(\text{CF}_3\text{SO}_2)_2$, and the electrolyte compound is at least one carbonate selected from the group consisting of ethylene carbonate (EC), propylene carbonate (PC), gamma-butyrolactone (GBL), diethyl carbonate (DEC), dimethyl carbonate (DMC), ethylmethyl carbonate (EMC) and methylpropyl carbonate (MPC).

8. (Currently amended) The lithium secondary cell according to claim 5, wherein the content of the lithium manganese oxide having a higher irreversible capacity than the lithium-transition metal oxide having a layered structure is 1 to 50 parts by weight based on 100 parts by weight of the lithium-transition metal oxide.

9. (Currently amended) The lithium secondary cell according to claim 5, wherein the lithium manganese oxide having a higher irreversible capacity than the lithium-transition metal oxide and having a layered structure is $\text{LiCr}_{0.1}\text{Mn}_{0.9}\text{O}_2$.

10. (Currently amended) The lithium secondary cell according to claim 5, wherein the lithium ~~manganese~~ transition metal oxide is at ~~least~~ least one material selected from the group consisting of:

LiCoO_2 , LiNiO_2 , LiMnO_2 , LiMn_2O_4 , $\text{Li}(\text{Ni}_a\text{Co}_b\text{Mn}_c)\text{O}_2$, $\text{LiNi}_{1-d}\text{Co}_d\text{O}_2$, $\text{LiCo}_{1-d}\text{Mn}_d\text{O}_2$, $\text{LiNi}_{1-d}\text{Mn}_d\text{O}_2$, $\text{Li}(\text{Ni}_x\text{Co}_y\text{Mn}_z)\text{O}_4$, $\text{LiMn}_{2-n}\text{Ni}_n\text{O}_4$, $\text{LiMn}_{2-n}\text{Co}_n\text{O}_4$, LiCoPO_4 and LiFePO_4 , wherein $0 < a < 1$, $0 < b < 1$, $0 < c < 1$, $a + b + c = 1$, $0 \leq d < 1$, $0 < x < 2$, $0 < y < 2$, $0 < z < 2$, $x + y + z = 2$, and $0 < n < 2$.